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Sequence Listing was accepted.

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Reviewer: markspencer

Timestamp: [year=2008; month=6; day=27; hr=9; min=33; sec=38; ms=218; ]

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Application No: 10591395 Version No: 1.0

**Input Set:****Output Set:**

**Started:** 2008-06-26 15:18:50.834  
**Finished:** 2008-06-26 15:18:58.308  
**Elapsed:** 0 hr(s) 0 min(s) 7 sec(s) 474 ms  
**Total Warnings:** 89  
**Total Errors:** 0  
**No. of SeqIDs Defined:** 90  
**Actual SeqID Count:** 90

Error code	Error Description
W 402	Undefined organism found in <213> in SEQ ID (1)
W 402	Undefined organism found in <213> in SEQ ID (2)
W 402	Undefined organism found in <213> in SEQ ID (3)
W 402	Undefined organism found in <213> in SEQ ID (4)
W 402	Undefined organism found in <213> in SEQ ID (5)
W 402	Undefined organism found in <213> in SEQ ID (6)
W 402	Undefined organism found in <213> in SEQ ID (7)
W 402	Undefined organism found in <213> in SEQ ID (8)
W 402	Undefined organism found in <213> in SEQ ID (10)
W 402	Undefined organism found in <213> in SEQ ID (11)
W 402	Undefined organism found in <213> in SEQ ID (12)
W 402	Undefined organism found in <213> in SEQ ID (13)
W 402	Undefined organism found in <213> in SEQ ID (14)
W 402	Undefined organism found in <213> in SEQ ID (15)
W 402	Undefined organism found in <213> in SEQ ID (16)
W 402	Undefined organism found in <213> in SEQ ID (17)
W 402	Undefined organism found in <213> in SEQ ID (18)
W 402	Undefined organism found in <213> in SEQ ID (19)
W 402	Undefined organism found in <213> in SEQ ID (20)
W 402	Undefined organism found in <213> in SEQ ID (21)

**Input Set:**

**Output Set:**

**Started:** 2008-06-26 15:18:50.834  
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**Total Warnings:** 89  
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Error code

Error Description

This error has occurred more than 20 times, will not be displayed

# SEQUENCE LISTING

<110> Chiron Corporation  
Grandi, Guido  
Ratti, Giulio

<120> Immunogenic Compositions for Chlamydia Pneumoniae

<130> 002441.00124 (PP21431.004)

<140> 10591395

<141> 2008-06-26

<150> PCT/US 05/06588

<151> 2005-03-02

<160> 90

<170> PatentIn version 3.2

<210> 1

<211> 928

<212> PRT

<213> Chlamydia pneumonia

<400> 1

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Phe Thr Ser Cys Ser Thr Val Phe Ala Ala Thr Ala Glu Asn Ile Gly  
20 25 30

Pro Ser Asp Ser Phe Asp Gly Ser Thr Asn Thr Gly Thr Tyr Thr Pro  
35 40 45

Lys Asn Thr Thr Thr Gly Ile Asp Tyr Thr Leu Thr Gly Asp Ile Thr  
50 55 60

Leu Gln Asn Leu Gly Asp Ser Ala Ala Leu Thr Lys Gly Cys Phe Ser  
65 70 75 80

Asp Thr Thr Glu Ser Leu Ser Phe Ala Gly Lys Gly Tyr Ser Leu Ser  
85 90 95

Phe Leu Asn Ile Lys Ser Ser Ala Glu Gly Ala Ala Leu Ser Val Thr  
100 105 110

Thr Asp Lys Asn Leu Ser Leu Thr Gly Phe Ser Ser Leu Thr Phe Leu  
115 120 125

Ala Ala Pro Ser Ser Val Ile Thr Thr Pro Ser Gly Lys Gly Ala Val  
130 135 140

Lys Cys Gly Gly Asp Leu Thr Phe Asp Asn Asn Gly Thr Ile Leu Phe  
145 150 155 160

Lys Gln Asp Tyr Cys Glu Glu Asn Gly Gly Ala Ile Ser Thr Lys Asn  
165 170 175

Leu Ser Leu Lys Asn Ser Thr Gly Ser Ile Ser Phe Glu Gly Asn Lys  
180 185 190

Ser Ser Ala Thr Gly Lys Lys Gly Gly Ala Ile Cys Ala Thr Gly Thr  
195 200 205

Val Asp Ile Thr Asn Asn Thr Ala Pro Thr Leu Phe Ser Asn Asn Ile  
210 215 220

Ala Glu Ala Ala Gly Gly Ala Ile Asn Ser Thr Gly Asn Cys Thr Ile  
225 230 235 240

Thr Gly Asn Thr Ser Leu Val Phe Ser Glu Asn Ser Val Thr Ala Thr  
245 250 255

Ala Gly Asn Gly Gly Ala Leu Ser Gly Asp Ala Asp Val Thr Ile Ser  
260 265 270

Gly Asn Gln Ser Val Thr Phe Ser Gly Asn Gln Ala Val Ala Asn Gly  
275 280 285

Gly Ala Ile Tyr Ala Lys Lys Leu Thr Leu Ala Ser Gly Gly Gly Gly  
290 295 300

Gly Ile Ser Phe Ser Asn Asn Ile Val Gln Gly Thr Thr Ala Gly Asn  
305 310 315 320

Gly Gly Ala Ile Ser Ile Leu Ala Ala Gly Glu Cys Ser Leu Ser Ala  
325 330 335

Glu Ala Gly Asp Ile Thr Phe Asn Gly Asn Ala Ile Val Ala Thr Thr  
340 345 350

Pro Gln Thr Thr Lys Arg Asn Ser Ile Asp Ile Gly Ser Thr Ala Lys  
 355 360 365

Ile Thr Asn Leu Arg Ala Ile Ser Gly His Ser Ile Phe Phe Tyr Asp  
 370 375 380

Pro Ile Thr Ala Asn Thr Ala Ala Asp Ser Thr Asp Thr Leu Asn Leu  
 385 390 395 400

Asn Lys Ala Asp Ala Gly Asn Ser Thr Asp Tyr Ser Gly Ser Ile Val  
 405 410 415

Phe Ser Gly Glu Lys Leu Ser Glu Asp Glu Ala Lys Val Ala Asp Asn  
 420 425 430

Leu Thr Ser Thr Leu Lys Gln Pro Val Thr Leu Thr Ala Gly Asn Leu  
 435 440 445

Val Leu Lys Arg Gly Val Thr Leu Asp Thr Lys Gly Phe Thr Gln Thr  
 450 455 460

Ala Gly Ser Ser Val Ile Met Asp Ala Gly Thr Thr Leu Lys Ala Ser  
 465 470 475 480

Thr Glu Glu Val Thr Leu Thr Gly Leu Ser Ile Pro Val Asp Ser Leu  
 485 490 495

Gly Glu Gly Lys Lys Val Val Ile Ala Ala Ser Ala Ala Ser Lys Asn  
 500 505 510

Val Ala Leu Ser Gly Pro Ile Leu Leu Leu Asp Asn Gln Gly Asn Ala  
 515 520 525

Tyr Glu Asn His Asp Leu Gly Lys Thr Gln Asp Phe Ser Phe Val Gln  
 530 535 540

Leu Ser Ala Leu Gly Thr Ala Thr Thr Thr Asp Val Pro Ala Val Pro  
 545 550 555 560

Thr Val Ala Thr Pro Thr His Tyr Gly Tyr Gln Gly Thr Trp Gly Met  
 565 570 575

Thr Trp Val Asp Asp Thr Ala Ser Thr Pro Lys Thr Lys Thr Ala Thr  
580 585 590

Leu Ala Trp Thr Asn Thr Gly Tyr Leu Pro Asn Pro Glu Arg Gln Gly  
595 600 605

Pro Leu Val Pro Asn Ser Leu Trp Gly Ser Phe Ser Asp Ile Gln Ala  
610 615 620

Ile Gln Gly Val Ile Glu Arg Ser Ala Leu Thr Leu Cys Ser Asp Arg  
625 630 635 640

Gly Phe Trp Ala Ala Gly Val Ala Asn Phe Leu Asp Lys Asp Lys Lys  
645 650 655

Gly Glu Lys Arg Lys Tyr Arg His Lys Ser Gly Gly Tyr Ala Ile Gly  
660 665 670

Gly Ala Ala Gln Thr Cys Ser Glu Asn Leu Ile Ser Phe Ala Phe Cys  
675 680 685

Gln Leu Phe Gly Ser Asp Lys Asp Phe Leu Val Ala Lys Asn His Thr  
690 695 700

Asp Thr Tyr Ala Gly Ala Phe Tyr Ile Gln His Ile Thr Glu Cys Ser  
705 710 715 720

Gly Phe Ile Gly Cys Leu Leu Asp Lys Leu Pro Gly Ser Trp Ser His  
725 730 735

Lys Pro Leu Val Leu Glu Gly Gln Leu Ala Tyr Ser His Val Ser Asn  
740 745 750

Asp Leu Lys Thr Lys Tyr Thr Ala Tyr Pro Glu Val Lys Gly Ser Trp  
755 760 765

Gly Asn Asn Ala Phe Asn Met Met Leu Gly Ala Ser Ser His Ser Tyr  
770 775 780

Pro Glu Tyr Leu His Cys Phe Asp Thr Tyr Ala Pro Tyr Ile Lys Leu  
785 790 795 800

Asn Leu Thr Tyr Ile Arg Gln Asp Ser Phe Ser Glu Lys Gly Thr Glu

805	810	815
Gly Arg Ser Phe Asp Asp Ser Asn Leu Phe Asn Leu Ser Leu Pro Ile		
820	825	830
Gly Val Lys Phe Glu Lys Phe Ser Asp Cys Asn Asp Phe Ser Tyr Asp		
835	840	845
Leu Thr Leu Ser Tyr Val Pro Asp Leu Ile Arg Asn Asp Pro Lys Cys		
850	855	860
Thr Thr Ala Leu Val Ile Ser Gly Ala Ser Trp Glu Thr Tyr Ala Asn		
865	870	875 880
Asn Leu Ala Arg Gln Ala Leu Gln Val Arg Ala Gly Ser His Tyr Ala		
885	890	895
Phe Ser Pro Met Phe Glu Val Leu Gly Gln Phe Val Phe Glu Val Arg		
900	905	910
Gly Ser Ser Arg Ile Tyr Asn Val Asp Leu Gly Gly Lys Phe Gln Phe		
915	920	925
<210> 2		
<211> 841		
<212> PRT		
<213> Chlamydia pneumonia		
<400> 2		
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Ser Met Ser Asn Leu Leu Gly Ala Ala Thr Thr Glu Glu Leu Ser Ala		
20	25	30
Ser Asn Ser Phe Asp Gly Thr Thr Ser Thr Thr Ser Phe Ser Ser Lys		
35	40	45
Thr Ser Ser Ala Thr Asp Gly Thr Asn Tyr Val Phe Lys Asp Ser Val		
50	55	60
Val Ile Glu Asn Val Pro Lys Thr Gly Glu Thr Gln Ser Thr Ser Cys		
65	70	75 80



Phe	Lys	Asn	Asp	Ala	Ala	Ala	Gly	Asp	Leu	Asn	Phe	Leu	Gly	Gly	Gly	85	90	95	
Phe	Ser	Phe	Thr	Phe	Ser	Asn	Ile	Asp	Ala	Thr	Thr	Ala	Ser	Gly	Ala	100	105	110	
Ala	Ile	Gly	Ser	Glu	Ala	Ala	Asn	Lys	Thr	Val	Thr	Leu	Ser	Gly	Phe	115	120	125	
Ser	Ala	Leu	Ser	Phe	Leu	Lys	Ser	Pro	Ala	Ser	Thr	Val	Thr	Asn	Gly	130	135	140	
Leu	Gly	Ala	Ile	Asn	Val	Lys	Gly	Asn	Leu	Ser	Leu	Leu	Asp	Asn	Asp	145	150	155	160
Lys	Val	Leu	Ile	Gln	Asp	Asn	Phe	Ser	Thr	Gly	Asp	Gly	Gly	Ala	Ile	165	170	175	
Asn	Cys	Ala	Gly	Ser	Leu	Lys	Ile	Ala	Asn	Asn	Lys	Ser	Leu	Ser	Phe	180	185	190	
Ile	Gly	Asn	Ser	Ser	Ser	Thr	Arg	Gly	Gly	Ala	Ile	His	Thr	Lys	Asn	195	200	205	
Leu	Thr	Leu	Ser	Ser	Gly	Gly	Glu	Thr	Leu	Phe	Gln	Gly	Asn	Thr	Ala	210	215	220	
Pro	Thr	Ala	Ala	Gly	Lys	Gly	Gly	Ala	Ile	Ala	Ile	Ala	Asp	Ser	Gly	225	230	235	240
Thr	Leu	Ser	Ile	Ser	Gly	Asp	Ser	Gly	Asp	Ile	Ile	Phe	Glu	Gly	Asn	245	250	255	
Thr	Ile	Gly	Ala	Thr	Gly	Thr	Val	Ser	His	Ser	Ala	Ile	Asp	Leu	Gly	260	265	270	
Thr	Ser	Ala	Lys	Ile	Thr	Ala	Leu	Arg	Ala	Ala	Gln	Gly	His	Thr	Ile	275	280	285	
Tyr	Phe	Tyr	Asp	Pro	Ile	Thr	Val	Thr	Gly	Ser	Thr	Ser	Val	Ala	Asp	290	295	300	

Ala Leu Asn Ile Asn Ser Pro Asp Thr Gly Asp Asn Lys Glu Tyr Thr  
305 310 315 320

Gly Thr Ile Val Phe Ser Gly Glu Lys Leu Thr Glu Ala Glu Ala Lys  
325 330 335

Asp Glu Lys Asn Arg Thr Ser Lys Leu Leu Gln Asn Val Ala Phe Lys  
340 345 350

Asn Gly Thr Val Val Leu Lys Gly Asp Val Val Leu Ser Ala Asn Gly  
355 360 365

Phe Ser Gln Asp Ala Asn Ser Lys Leu Ile Met Asp Leu Gly Thr Ser  
370 375 380

Leu Val Ala Asn Thr Glu Ser Ile Glu Leu Thr Asn Leu Glu Ile Asn  
385 390 395 400

Ile Asp Ser Leu Arg Asn Gly Lys Lys Ile Lys Leu Ser Ala Ala Thr  
405 410 415

Ala Gln Lys Asp Ile Arg Ile Asp Arg Pro Val Val Leu Ala Ile Ser  
420 425 430

Asp Glu Ser Phe Tyr Gln Asn Gly Phe Leu Asn Glu Asp His Ser Tyr  
435 440 445

Asp Gly Ile Leu Glu Leu Asp Ala Gly Lys Asp Ile Val Ile Ser Ala  
450 455 460

Asp Ser Arg Ser Ile Asp Ala Val Gln Ser Pro Tyr Gly Tyr Gln Gly  
465 470 475 480

Lys Trp Thr Ile Asn Trp Ser Thr Asp Asp Lys Lys Ala Thr Val Ser  
485 490 495

Trp Ala Lys Gln Ser Phe Asn Pro Thr Ala Glu Gln Glu Ala Pro Leu  
500 505 510

Val Pro Asn Leu Leu Trp Gly Ser Phe Ile Asp Val Arg Ser Phe Gln  
515 520 525

Asn Phe Ile Glu Leu Gly Thr Glu Gly Ala Pro Tyr Glu Lys Arg Phe

530

535

540

Trp Val Ala Gly Ile Ser Asn Val Leu His Arg Ser Gly Arg Glu Asn  
545 550 555 560

Gln Arg Lys Phe Arg His Val Ser Gly Gly Ala Val Val Gly Ala Ser  
565 570 575

Thr Arg Met Pro Gly Gly Asp Thr Leu Ser Leu Gly Phe Ala Gln Leu  
580 585 590

Phe Ala Arg Asp Lys Asp Tyr Phe Met Asn Thr Asn Phe Ala Lys Thr  
595 600 605

Tyr Ala Gly Ser Leu Arg Leu Gln His Asp Ala Ser Leu Tyr Ser Val  
610 615 620

Val Ser Ile Leu Leu Gly Glu Gly Gly Leu Arg Glu Ile Leu Leu Pro  
625 630 635 640

Tyr Val Ser Lys Thr Leu Pro Cys Ser Phe Tyr Gly Gln Leu Ser Tyr  
645 650 655

Gly His Thr Asp His Arg Met Lys Thr Glu Ser Leu Pro Pro Pro Pro  
660 665 670

Pro Thr Leu Ser Thr Asp His Thr Ser Trp Gly Gly Tyr Val Trp Ala  
675 680 685

Gly Glu Leu Gly Thr Arg Val Ala Val Glu Asn Thr Ser Gly Arg Gly  
690 695 700

Phe Phe Gln Glu Tyr Thr Pro Phe Val Lys Val Gln Ala Val Tyr Ala  
705 710 715 720

Arg Gln Asp Ser Phe Val Glu Leu Gly Ala Ile Ser Arg Asp Phe Ser  
725 730 735

Asp Ser His Leu Tyr Asn Leu Ala Ile Pro Leu Gly Ile Lys Leu Glu  
740 745 750

Lys Arg Phe Ala Glu Gln Tyr Tyr His Val Val Ala Met Tyr Ser Pro  
755 760 765

Asp Val Cys Arg Ser Asn Pro Lys Cys Thr Thr Thr Leu Leu Ser Asn  
770 775 780

Gln Gly Ser Trp Lys Thr Lys Gly Ser Asn Leu Ala Arg Gln Ala Gly  
785 790 795 800

Ile Val Gln Ala Ser Gly Phe Arg Ser Leu Gly Ala Ala Ala Glu Leu  
805 810 815

Phe Gly Asn Phe Gly Phe Glu Trp Arg Gly Ser Ser Arg Ser Tyr Asn  
820 825 830

Val Asp Ala Gly Ser Lys Ile Lys Phe  
835 840

<210> 3  
<211> 428  
<212> PRT  
<213> Chlamydia pneumonia

<400> 3

Met Phe Glu Ala Val Ile Ala Asp Ile Gln Ala Arg Glu Ile Leu Asp  
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20 25 30

Ser Val Gly Glu Ala Arg Val Pro Ser Gly Ala Ser Thr Gly Lys Lys  
35 40 45

Glu Ala Leu Glu Phe Arg Asp Thr Asp Ser Pro Arg Tyr Gln Gly Lys  
50 55 60

Gly Val Leu Gln Ala Val Lys Asn Val Lys Glu Ile Leu Phe Pro Leu  
65 70 75 80

Val Lys Gly Cys Ser Val Tyr Glu Gln Ser Leu Ile Asp Ser Leu Met  
85 90 95

Met Asp Ser Asp Gly Ser Pro Asn Lys Glu Thr Leu Gly Ala Asn Ala  
100 105 110

Ile Leu Gly Val Ser Leu Ala Thr Ala His Ala Ala Ala Ala Thr Leu  
115 120 125

Arg Arg Pro Leu Tyr Arg Tyr Leu Gly Gly Cys Phe Ala Cys Ser Leu  
130 135 140

Pro Cys Pro Met Met Asn Leu Ile Asn Gly Gly Met His Ala Asp Asn  
145 150 155 160

Gly Leu Glu Phe Gln Glu Phe Met Ile Arg Pro Ile Gly Ala Ser Ser  
165 170 175

Ile Lys Glu Ala Val Asn Met Gly Ala Asp Val Phe His Thr Leu Lys  
180 185 190

Lys Leu Leu His Glu Arg Gly Leu Ser Thr Gly Val Gly Asp Glu Gly  
195 200 205

Gly Phe Ala Pro Asn Leu Ala Ser Asn Glu Glu Ala Leu Glu Leu Leu  
210 215 220

Leu Leu Ala Ile Glu Lys Ala Gly Phe Thr Pro Gly Lys Asp Ile Ser  
225 230 235 240

Leu Ala Leu Asp Cys Ala Ala Ser Ser Phe Tyr Asn Val Lys Thr Gly  
245